

**AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111**

Serial Number: 10/045315

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Title: MECHANICAL SUPPORT SYSTEM FOR A THIN PACKAGE

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Dkt: 884.537US1

Please cancel claim 14.

15. (Amended) A data processing system comprising:

a bus;

a memory coupled to the bus;

a processor; and

[a] an electronic package including an interposer having a thickness less than 1 mm, a pin carrier and an electronic component, the processor being secured to one side of the interposer and the pin carrier being secured to other side of the interposer, the pin carrier electrically connecting the processor to the bus and including a cavity that is [against] adjacent the interposer opposite to the processor, the electronic component being secured to the interposer within the cavity in the pin carrier, the interposer being thin enough such that the interposer is incapable of withstanding a mechanical load generated by the die and the pin carrier to an identical electronic package, and the package further including an encapsulant that at least partially fills the cavity in the pin carrier to mechanically support the interposer during operation of the data processing system.

17. (Amended) The data processing system of claim [15] 16, wherein the interposer [has a thickness less than 1mm] is thin enough to minimize the inductive loop between the capacitor and the die.

18. (Amended) An electronic package comprising:

an interposer having a thickness less than 1 mm;

a die secured to the interposer;

a pin carrier secured to the interposer, the pin carrier including a cavity opposite to the die;

an electronic component secured to the interposer within the cavity; [and]

the interposer being thin enough such that the interposer is incapable of withstanding a mechanical load generated by the die and the pin carrier to an identical electronic package; and



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**CLEAN VERSION OF PENDING CLAIMS**

**MECHANICAL SUPPORT SYSTEM FOR A THIN PACKAGE**

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Serial No.: 10/045,315

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7. (Amended) An electronic package comprising:

an interposer having an upper surface and a lower surface, the interposer having a thickness less than 1 mm;

a die secured to the upper surface of the interposer;

a pin carrier having a cavity, the pin carrier being secured to the lower surface of the interposer such that the cavity is adjacent, the interposer opposite to the die;

an electronic component secured to the lower surface of the interposer, the electronic component being positioned within the cavity in the pin carrier;

the interposer being thin enough such that the interposer is incapable of withstanding a mechanical load generated by the die and the pin carrier to an identical electronic package; and

an encapsulant at least partially filling the cavity to mechanically support the interposer during mechanical loading the package.

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8. The electronic package of claim 7, wherein the interposer is a composite metal and organic material.

9. The electronic package of claim 7, wherein the electronic component is a capacitor and the interposer is thin enough to minimize the inductive loop between the capacitor and the die.

10. The electronic package of claim 7, wherein the encapsulant is an epoxy.
11. The electronic package of claim 7, wherein the pin carrier is attached to the interposer using a ball grid array of solder balls.
12. The electronic package of claim 7, wherein the cavity in the pin carrier includes a perimeter and the die includes a perimeter substantially aligned with the perimeter of the cavity.
13. The electronic package of claim 7, wherein the cavity in the pin carrier includes a perimeter and the die includes a perimeter that is smaller than the perimeter of the cavity.
14. (Canceled)

*X*  
*C1*  
15. (Amended) A data processing system comprising:

a bus;  
a memory coupled to the bus;  
a processor; and

an electronic package including an interposer having a thickness less than 1 mm, a pin carrier and an electronic component, the processor being secured to one side of the interposer and the pin carrier being secured to other side of the interposer, the pin carrier electrically connecting the processor to the bus and including a cavity that is adjacent the interposer opposite to the processor, the electronic component being secured to the interposer within the cavity in the pin carrier, the interposer being thin enough such that the interposer is incapable of withstanding a mechanical load generated by the die and the pin carrier to an identical electronic package, and the package further including an encapsulant that at least partially fills the cavity in the pin carrier to mechanically support the interposer during operation of the data processing system.

16. The data processing system of claim 15, wherein the electronic component is a capacitor.

17. (Amended) The data processing system of claim 16, wherein the interposer is thin enough to minimize the inductive loop between the capacitor and the die.

18. (Amended) An electronic package comprising:  
an interposer having a thickness less than 1 mm;  
a die secured to the interposer;  
a pin carrier secured to the interposer, the pin carrier including a cavity opposite to the die;  
an electronic component secured to the interposer within the cavity;  
the interposer being thin enough such that the interposer is incapable of withstanding a mechanical load generated by the die and the pin carrier to an identical electronic package; and  
an encapsulant at least partially filling the cavity.

19. (Amended) The electronic package of claim 18, wherein the interposer the electronic component is a capacitor and the interposer is thin enough to minimize inductive loop between the capacitor and the die.

20. The electronic package of claim 18, where in the encapsulant is an epoxy.